history. It has called to its aid some of the best intellect of the country. Its literature has become extensive and assumed a high rank. Our State governments, in response to demands made upon them, are appointing State Entomologists. Our General Government is making liberal appropriations for entomological work in the Department of Agriculture at Washington, and also for sustaining a special United States Entomological Commission, now in the third year of its operations, charged with the investigation of a few of our more injurious insects.

"The study of insects assumes an importance in this country far greater than in any other part of the world. Nowhere else does mother earth yield in such variety and in such abundance her agricultural products; after supplying to repletion our own people, the excess is distributed to every quarter of the globe. Few, surprisingly few, of these varied products are native to our soil. Nearly all of our fruits, grasses, cereals and vegetables, and perhaps three-fourths of our weeds are of foreign importation—mainly from Europe. With their introduction, very many of the insects that preyed upon them were also introduced, or have been subsequently brought hither. But unfortunately for us, the parasites which preyed upon them and kept them under control, have, for the most part, been left behind. As the result, the imported pests, in their new home, find their favorite food-plants spread out in luxuriant growth over broad acres, where they may ply their destructive work without hinderance or molestation, until some native parasites acquire the habit of preying upon them.

"The grand scale upon which our crops are grown as no where else in the world—demanding for their gathering the invention of special mechanical contrivances, and that horse-power should be replaced by steam—has also as its attendant inevitable evil, an enormous increase of insect depredations. This may be illustrated by a reference to our apple-tree insects. * * * * * * "In like manner, any and every crop cultivated on a large scale offers strong invitation to insect attack, and wonderfully stimulates insect multiplication."

ON TWO NEW FORMS OF THE GENUS PARNASSIUS.

By Henry Edwards.

(*Read before the New York Entomol. Club, at the first meeting in December*, 1880.)

In my paper on Parnassius (Proc. Cal. Acad. Sc. 1878), I referred to a singular example sent to me from the Upper Yukon river, Alaska, which I then hesitated to describe, but which, by the advice of many entomologists, I now characterise as follows:

Parnassius Thor. Hy. Edw. n. sp.

Head, anterior portion of thorax above, and the whole of the

lower side, base of the tibiæ, and under side of abdomen thickly clothed with bright golden yellow hairs. There are also a few scales of the same color at the base of the costa of the primaries and along the sides of the abdominal segments. Antennæ and tarsi jet black, the latter with some yellow hairs at their base.

Upper side: Ground color sordid white, as in *P. Clarius* Evers., and *P. Delphius* Evers.

Primaries with the posterior margins broadly smoky and slightly transparent. Above the margin is a row of equal lunate white marks, then a moderately broad blackish band, narrowing a little at the interior margin, then a whitish maculate band, broadest on the internal margin and reduced to a spot on the costa. Anterior to this is a sinuate row of white spots, six in number, not reaching the internal margin, which is whitish at the base, dotted with black atoms, as is also the costa. Base of the wing blackish, the cell with one large ovate, and one oblong white spot. The system of markings of the primaries recalls that of the genus Thais, and is different from any other Parnassius known to me.

Secondaries: Base and anal margin broadly black, the markings being very clearly cut around the upper portion of the cell, leaving a well-defined ovate white space. From the anal angle up to the second sub-costal nervure runs a wide black band, enclosing at the anal angle one small round and one lunate red spot. Between the second sub-costal and the discoidal nervures is an almost conical red patch, and below it a small round spot, also red. On the centre of the costa is a triangular red spot, surrounded with black. The submarginal lunules are very sharp and distinct, as indeed are all the markings, and the fringes of both wings are deep, intense black.

Under side: Resembling the upper, but the markings are a little fainter, and the wings have the glassy appearance so often found on the genus. The secondaries have four red spots at the base—the one on the costa small and almost linear, the second nearly square, the third triangular, and the fourth oblong. The other red spots have their centres white.

Expanse of wings, 2. 10 inch.

Type. Coll. Hy. Edwards.

This exquisite and very interesting insect was taken about 800 miles up the Yukon river, Alaska, by Mr. F. W. Smith, of San Francisco, and by him kindly added to my collection. In some respects it approaches closely to *P. Eversmanni* Men., but differs from the figure of that species given by Mr. W. H. Edwards, in the *Butterflies of North America*, not only in the color, which is remarkably distinct, but in the broader black base of the primaries, the wider bands, and the much larger proportion of black

on both wings. The red spots, too, are more numerous, those of the anal angle and the base of the costa of secondaries being wanting in Mr. Edwards' figure. As the present form, however, comes from nearly the same locality as the type from which that figure is taken, it may ultimately prove to be an extreme variety of *P. Eversmanni*. It is, however, so distinct to be considered for the present as a separate species.

PARNASSIUS HERMODUR. n. var.

♀ A remarkable variety of *P. Smintheus* Dbly., which approaches very closely *P. Corybas*, Fisch, from the Altai. The whole upper surface of the primaries is of a smoky black hue, slightly transparent, the usual bands being lost in the ground color of the wing. In this respect it nearly resembles *P. Corybas*, but the latter, as well as two red spots near the costa, has also another near the internal margin, which is absent in the present form. The red spots of secondaries are nearly the same in both, but in *P. Hermodur* there is a trace of some red scales near the anal angle, which is wanting in *P. Corybas*. The black sub-marginal lunules of secondaries are also much more strongly marked in *P. Corybas* than in *P. Hermodur*, and the wing is whiter and more opaque. On the other side the resemblance is more apparent, the red spots on the costa, and that between the sub-costal nervures having white centres in both forms, while those of the base are wholly red, and alike in their color and arrangement. The present insect is smaller than its ally, the expanse being only 2.30 inch, while the pair of *P. Corybas* in my collection measure 2.65 inch.

Southern Colorado.

Type. Coll. Hy. Edwards.

This extremely interesting insect was generously given to me by my friend, Dr. James S. Bailey, of Albany. I have named it after the son of Odin and Freija, and the Mercury of the Scandinavian mythology.

DESCRIPTION OF FOUR NEW SPECIES OF MOTHS.

BY A. R. GROTE.

(*Read before the N. Y. Ent. Club, at the first meeting in December*, 1880.)

SCEPSIS EDWARDSII. n. sp.

This form is stouter than *fulvicollis*, with paler forewings and approaches *Echeta albipennis*, H.-S. from Cuba.

Forewings pale, slaty brown, with a whitish cast; the costal edge pale yellow, which shade extends faintly within the edge, from the middle outwardly, and obtains beneath, over apical third of costa.

Secondaries hyaline with broad smoky costal border, and narrow smoky external edging.

Beneath, primaries bluish black; secondaries hyaline with bluish costal border.

Head behind, palpi, base of fore legs orange. Thorax, pale,